

## University of Northern Iowa UNI ScholarWorks

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Biology News

Department of Biology

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Winter 2014

# Biology News, Winter 2014

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# University of Northern Iowa

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# Biology Students and Alumni



Stephen Cain, former Biology grad student worked the summer of 2013 in Juneau, Alaska as a Park Ranger in the Tongass National Forest. Here he is in British Columbia at the famous Emerald Lake.

◆ **Steven Cain** This summer I had the opportunity to travel to Juneau, Alaska to work as a USDA Forest Service Park Ranger at the Mendenhall Glacier Visitor Center and Recreation Area in the Tongass National Forest. From May through the end of September, I lived in Forest Service housing located just two miles from the visitor center and some of the most beautiful scenery in the Juneau area. The visitor center, which sits on top of a rocky outcrop, is surrounded by trees, trails, Mendenhall lake, and the Juneau Icefield. The visitor center offers incredible views of Mendenhall Glacier flowing down through the valley from the Juneau Icefield as well as of the abundant flora and fauna.

I wore many different hats as a Park Ranger. My position involved a tremendous amount of public contact in a highly visible setting. Over 400,000 people visit the Mendenhall Glacier annually. Due to the high guest to employee ratio and size of the park, the rangers rotated stations throughout the day. For half of the day I worked inside the visitor center creating and giving formal presentations, trail advice, and working at the information desk and host stations. The other half of the day I rotated through the outdoor stations. My most important job, however, was ensuring the safety and enjoyment of all of our guests. This was especially critical and challenging at the Mendenhall recreation area because of the significant black bear activity.

When the salmon begin to spawn in mid-summer, droves of tourists and locals begin to crowd the viewing platforms and trails. Fortunately, or unfortunately,

depending on who you ask, the bears do, too. Seeing a bear in Alaska is at the top of many people's list and they will often go to great lengths, or even put themselves in harms way, to get a "perfect photo". A large part of my job responsibility was to prevent people from doing so, while also providing them with important educational messages about the resources surrounding them. On a daily basis, I would monitor bear activity and investigate reported sightings. Many of the adult bears are used to seeing large groups of people and are extremely tolerant of people, even at close distances. However, all of the bears in the park are wild and, therefore, come and go when and wherever they please. It was my job to discourage the animals from walking down the busy sidewalks and trails. I carried bear spray, but fortunately never had to use it. Instead, I used a variety of mild-moderate

hazing techniques that I learned during job training. To my surprise, the majority of the bears I encountered responded very well to these techniques.

I was also tasked with trying to keep stress levels low in both the animals and guests in those stressful situations. The other staff members and I worked extremely hard as a team to provide ample viewing opportunities for our guests, while also ensuring that the bears had enough space or barriers



Mendenhall Glacier recreation area inside the park at Juneau, Alaska where Stephen worked. The waterfall in the picture is Nugget Falls which empties into Mendenhall Lake.

between them and the people to move freely. Working with the Forest Service was a wonderful and rewarding experience. I got to travel around one of the most beautiful states in America and gained invaluable experience that I won't soon forget.



# Biology Students and Alumni (continued)

◆ **Sarah Freeland** My name is Sarah Freeland and I am a sophomore at UNI. I went on the Biology and Psychology Research trip to Taiwan in the summer of 2013. Once we arrived, we had a tour of all the research labs we could work in, and we then got to choose which one sounded most interesting. I chose to spend the first three weeks in a behavioral neuroscience lab working with mice. The research dealt with how different genes affected certain behaviors in mice, and this



was linked to autism in humans. The Taiwanese professor and graduate students were a lot of help in explaining what they were doing, and they even gave me and another UNI student our own mice to conduct experiments on. I spent my last three weeks in a sleep research lab, where I learned all about sleep cycles and different factors that affect our sleep. I even got to participate in a sleep study, where they connected wires to me, monitored my sleeping, and then explained all the results to me later!

We usually spent about four days a week doing research for two-three hours in the morning. Along with research, we took a Mandarin Chinese class in the afternoon Monday-Thursday. This class was a lot of fun, and by the end of the trip, we were all able to have short conversations in Mandarin, order our own food at restaurants, and write our names using Chinese symbols. Besides research and class, we had three day weekends which we usually spent traveling to places such as hot springs, the ocean, and other notable places in Taiwan. While abroad, I learned so much about the Taiwanese culture, the Mandarin language, and doing biology research; all of which were completely new experiences to me. Everyone we met there was so helpful and friendly, and they really made this an experience of a lifetime!

◆ **Angela Wrage**, a senior majoring in biology and chemistry from Gladbrook, presented her research project, "The Effect of Nutrient Availability on the Evolu-

tion of Physiology in Two Tallgrass Prairie Species," at the 17th Annual Posters on the Hill event on April 24, in Washington, D.C. Wrage's project was selected from more than 800 applications. She was the only student representative from the state of Iowa at the event.

"Legislative support of undergraduate research in all fields, not just the sciences, is absolutely essential to the ability of our universities to prepare students for graduate school or a career," said Wrage. "I feel incredibly honored to have been accepted to Posters on the Hill. As the only Iowa representative at this event, I am thrilled to have the opportunity to represent both my state and my university."

Posters on the Hill is an annual poster session, hosted by the Council on Undergraduate Research, that aims to help members of congress understand the importance of undergraduate research. Only 60 students from institutes of higher education are selected to participate in the event each year. -- *Article by UNI University Relations.*

◆ **Lauren Carter** While attending UNI, I had the opportunity to participate in the National Student Exchange program. I had always been interested in studying marine biology, but as I attended a school in Iowa, marine biology was unfortunately not offered as a major. I read about national student exchange in a newsletter I picked up at the Study Abroad office. Originally, I had planned to study abroad somewhere warm, maybe Australia or South Africa, but I did not have the funds to make this dream a reality. So, instead I opted to try national student exchange. Depending on the school you choose to go to, you still pay the tuition you pay at your home institution. So, for me, I would still be able to pay in-state tuition.

For the 2011-2012 school year, I was accepted to the University of Rhode Island where they have a very well-known marine biology program and professors who are very well known in their respective fields. At UNI, I had become interested in studying fishes after working in Dr. Berendzen's lab and was excited to find that they had multiple ichthyology classes available. All of the faculty in the Biology Department were more than accommodating in helping me pick classes and thought it was a great opportunity to experience new things - like clam chowder and coffee milk.

This program allowed me to go somewhere different, meet new people, and to step out of my comfort zone. The program definitely changed my life and has provided me with endless opportunities I would have never dreamed possible.



# Biology Students and Alumni (continued)

◆ **Kelsey Wilson** received admission offers from Edward Via College of Osteopathic Medicine in South Carolina and DeBusk College of Osteopathic Medicine in Tennessee. She will begin medical studies August 2014. Currently she is in a graduate school program at Lincoln Memorial University in Tennessee and will graduate in May with a Masters in Biomedical Professions (MS).

## *She writes.....*

I have enjoyed the first six months of this masters program and owe my preparedness to the faculty at UNI. Last semester I completed medical gross anatomy with first year medical students. Throughout the semester, I thought of Mary McDade quite a bit. She instructed my Anatomy and Physiology class, which was one of my favorite classes, when I was at UNI. I think she would be proud of anatomy knowledge I remembered from her class. She prepared me well for medical gross anatomy and I give her credit for my performance. I think she would be happy to know I finished medical gross anatomy at the top of my class and am now in the running for a TA (Teaching Assistant) position for the PA (Physicians Assistant) class. She would also love how my dissection skills have improved enough to grant me a spot in pre-section. I sure appreciate everything she has taught me.

I would also like to extend my appreciation to Dr. McClenahan and Dr. Walter. These professors prepared me well for the topics of immunology and microbiology, which will both be covered during my first year of medical school. I feel confident that my base knowledge in these areas will give me the ability to learn and apply these topics efficiently and effectively. I can say with confidence that I would not be where I am now without these outstanding faculty members at UNI. I cannot thank them enough for everything they do for their students.

## ◆ **Deidra Sieck**

I thought I would send an update on the Iowa State Biomedical Sciences Program.

I had orientation today and met my class and the professors that I will be working with this year. The professors in the Biomedical Sciences Department seem like amazing people to work with.

I also just bought my first white lab coat, and am feeling like a future doctor or scientist! Thank you for everything you did for me through my four years at UNI. I am very glad I chose to be a panther!

◆ **Lydia Miller**, biology student, states, "I just wanted to let you know that I have officially accepted an internship with the Navy's Marine Mammal Program!!! I also received offers from Oceans of Fun and the New York Aquarium, but the Navy was by far my top choice."

◆ **Dr. Jim Colbert** currently serves as the Undergraduate Biology Program Director at Iowa State University in the Department of Ecology, Evolution, and Organismal Biology. Jim is a colleague with whom our Department Head, David Saunders, frequently interacts. While visiting with David, Jim let him know that even though he graduated with a B.S. from Iowa State University, the University of Northern Iowa had a positive impact on his career.

## *Here is Jim's story.....*

I enrolled at UNI (in Biology) in the fall of 1974. One of my classes that fall was "Local Flora", taught by Dr. Larry Eilers. The class was a revelation. Like most young people interested in biology, I was more focused on and knowledgeable about animals. Plants were sort of a "green blur" to me. I had no idea there was such a diversity of plants. It was amazing to walk through the woods with him and learn the names of plants, some of which I had never noticed, though I'd spent a lot of time in eastern Iowa's woods growing up. I distinctly recall learning that giant ragweed (a plant species I was quite familiar with) was a member of the genus *Ambrosia*. I believe Dr. Eilers explained why it was named after the "food of the Gods", though, sadly, I can't remember the explanation.

Although Biology was an important study for me, there was also a "girl" in the equation. The "girl" was a first-year student at the University of Iowa that year, and I ended up spending a considerable amount of time in Iowa City during the 1974-75 academic year. So, we both decided to transfer to Iowa State University beginning in the fall 1975. I told my parents that I was transferring because I wanted to major in Forestry, which lasted exactly one quarter, after which I was back in Biology. After taking more plant biology courses (or "botany" as they were then called), I ended up going to grad school (UW-Madison) to study plant biology. The "girl" (Karen) and I got married in 1978 and remain married to this day. So, UNI and Dr. Eilers had a substantial impact on my academic interests and future career.

Even a short exposure to UNI Biology can have lasting impacts!

## The Department of Biology receives funding for specimens and microscopes from the Carver Charitable Trust

**T**he Department of Biology has once again been the recipient of nearly \$150,000 from the Carver Charitable Trust to purchase specimens and models for the Organismal Diversity laboratory as well as to purchase stereo dissecting microscopes to be used in our Plant Systematics, Plant Developmental Anatomy, Plant Diversity and Evolution, and Entomology courses.

The Organismal Diversity course covers the diversity of life. The laboratory portion in particular focuses on comparing form and function of animal and plant groups in an evolutionary context. As such, students utilize preserved specimens and models for observation and comparison of structural features. These models are also used while dissecting specimens of representative taxa. Student learning and instruction will be greatly enhanced since each student group will now have access to their own models while performing the dissections.

The purchased stereo dissecting microscopes will be used for identification purposes in the above courses during which students place an organism under the microscope and learn to identify the species based on the traits they observe. Microscope images can be digitally photographed using a digital camera and then used for data-basing the organisms, classroom projects, reports, and presentations. These dissecting microscopes replace the currently used microscopes that are antiquated (some from Iowa State Teachers College) and optically deficient making it difficult for students to do the labs efficiently and accurately. In addition to the student stereo microscopes, funds allowed for the purchase of an instructor's microscope that will attach to an existing computer and projector system that will allow for images from the scope to be projected onto a large projector screen.

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### *Greetings from the Department continued from page 1*

dents push all of us in the department to continually strive to offer the highest quality education and find new opportunities in which students can participate. The University of Northern Iowa may not have the name recognition as such similar sized institutions as Duke University, University of Notre Dame, Wake Forest University or Northwestern University, but I have no doubt that our students would compete extremely well at such institutions. The unsolicited letters and emails I receive from recent graduates and alumni would confirm my conclusions. I am extremely proud to be associated with the Department of Biology at the University of Northern Iowa.

As each of you are likely aware, the University of Northern Iowa underwent some turmoil over the past several years. As a result, student numbers for this current academic year are down for the University of

Northern Iowa and in the Department of Biology. The numbers of majors in Biology dropped from a high of 722 during the 2011-2012 academic year, to 662 majors for the current academic year. The decreases we have seen in majors is equivalent to the overall decrease in student numbers at the University as a whole. However, in Biology, we are seeing an uptrend in student applications equivalent to those during the 2011-2012 academic year. We continue to work to get the message out across Iowa regarding the high quality education offered within the Department of Biology at the University of Northern Iowa. However, we could use your help in letting others know of our "hidden jewel". Thus, in this issue we wanted to share with you stories in regard to the impact the Department of Biology has had on our alumni and those who may have only spent a short time with us. We also wanted to let you know about the opportunities we offer our students

through new class offerings, class field trips, internships, study abroad, and involvement with student organizations.

We continue to let you know about the dedication and commitment of our faculty and staff and that many of these individuals are recognized by others for their accomplishments. The department continues to obtain funding to purchase equipment to provide cutting-edge classroom and laboratory experiences for our students. The Department of Biology is an active and energized community and I hope that this comes through in this newsletter. As always, I encourage you to let us know about your own accomplishments and to keep us updated on your own pursuits. I hope that each of you have the same pride as I do in having a connection with the University of Northern Iowa and the Department of Biology. Best wishes for the 2014 year.



## Department News (continued)

### Carl Thurman's efforts extend the benefit of Carver Funding

The Department of Biology is continually striving to provide our students with modern and relevant laboratory experiences. We have been aided in this effort through funding provided by the Carver Charitable Trust. Recently, we received \$218,000 to update teaching equipment in biomedical classes. About \$26,000 of the funds received from this funding have gone to improving computer-based physiology exercises based initially on products available through Biopac®, Goleta, CA. Over the last two years Dr. Carl Thurman has worked with the company's owner and inventor of the Biopac® Student Lab system, William McMullen, to design and improve five physiology lessons offered through Biopac®. In 2012, Mr. McMullen traveled to UNI to test several experiments. These laboratory exercises describe the fundamental physiology of action potentials in the sciatic nerve, effects of drugs on the heart, electrical

regulation of contractions by the isolated skeletal muscle, intracellular potentials of the myogenic heart, and chemical regulation



Students using a Biopac® product in the physiology laboratory, fall 2013. From left to right, Katherine Thomas, Taylor Baier, and Emily Vander Zee.

of gastric muscles. In addition to a former student, Britney Roberts (now at Des Moines University), students in both Comparative

Animals Physiology (2012) and Vertebrate Physiology (2013) laboratories have eagerly participated in perfecting these instructions.

These UNI tested-experiments were initially released in January 2014. Feedback on these experiments have been positive:

*"We just ran the frog nerve... It worked very well... This iteration is a very good improvement... This is a very easy to use lab. Well done!..."*  
PT @ SJ University, Philadelphia.

Consequently, benefits from Carver Foundation support to undergraduate laboratories

at UNI extend well beyond UNI and the state of Iowa to benefit STEM Education nationally.

### Reconnect with the Department of Biology

Whether it has been decades since you were last a UNI student or just last year, we invite you to reconnect with the students, faculty and staff in the Department of Biology and make an impact.

- 1) **Employment opportunities** – Does your company hire biology majors? Full-time positions, part-time positions, summer internships, whatever your needs might be, we'd like to make students aware of the career opportunities available to them with your organization.
- 2) **Job shadowing and informational interviewing** – Many biology majors are at UNI as the first step to their goal of professional or graduate school. In order for them to confirm their interest in their major area of study, we encourage them to job shadow and participate in informational interviews. If you are willing to meet with a student for 30 minutes or half day let us know.

- 3) **Host a student organization** – The Department of Biology has 12 active student organizations who invite professionals to campus to speak, as well as travel to local organizations for tours and informational meetings. If you are willing to speak to a student group, or host a group of students, we can connect you with some bright and motivated students hoping to follow your path.
- 4) **Faculty as consultants** – Department of Biology faculty members are actively engaged in research. If their area of interest matches yours, we can connect you to discuss mutual challenges and strategies. You can find information on faculty research at: [http://www.biology.uni.edu/about\\_facstaff.html](http://www.biology.uni.edu/about_facstaff.html)
- 5) **Micro contributions** – You may have heard of micro lending or micro financing. The Department of Biology is building on the concept. Biology Alumni funds can be pooled together

to make a huge impact with a small donation. We have students in need of scholarship funding, or paid research opportunities, which would benefit both the student and faculty members. Now you can contribute to the success of students, faculty and the department by being a part of collective resources. Through UNI Foundation, biology alums can give small amounts that add up to make a big difference! If 100 alums gave \$50 each we could fund several undergraduate scholarships or research opportunities and the students would feel an immediate impact.

If any of these opportunities are a fit for you, or if you have other ways you'd like to partner with the Department of Biology, please contact Dr. David Saunders at [david.saunders@uni.edu](mailto:david.saunders@uni.edu), 319-273-2456 or Joan Smothers at [joan.smothers@uni.edu](mailto:joan.smothers@uni.edu), 319-273-2010 as a first step.

# Faculty and Staff News

## Jeff Tamplin receives \$60,000 grant



Jeff Tamplin and his students use radio telemetry equipment to track wood turtles in the wild.

**D**r. Jeff Tamplin has been named the principal investigator of a federal grant sponsored by the U.S. Fisheries and Wildlife Service and disbursed through the Iowa Department of Natural Resources. The grant, entitled “Upper Midwest Riverine Turtle Habitat Improvement,” is part of the State Wildlife Grants-Competitive Program and awarded approximately \$494,000 for a collaborative project that includes turtle habitat restoration and monitoring work in Iowa, Michigan, Minnesota, and Wisconsin. The grant award encompasses three years and seeks to improve turtle habitat along rivers and streams on public and private lands. UNI’s portion of the grant includes over \$59,000 to support Dr. Tamplin’s research on the seasonal habitat usage, home range size, and population structure of *Glyptemys insculpta*,

the North American Wood turtle. Due to its extreme rarity, limited range, and the negative impact of agriculture and human development on the few known Iowa populations, the wood turtle has been listed as an endangered species in Iowa since 1997. Approximately \$13,000 will be used to buy radio telemetry equipment to facilitate turtle tracking and \$33,000 will be used to support a graduate student stipend and undergraduate student salaries over a 3-year period. The remaining funds will be used to restore stream-side habitat, build new nesting mounds above the flood plain, and clear timber in areas that wood turtles use for terrestrial basking and feeding.



This wood turtle wears a device for monitoring their locations.

Since 2003, Dr. Tamplin and his research team have recorded over 3000 locations of wood turtles in Iowa and marked 97 turtles for future identification. To date, this project has provided the basis for 4 graduate student’s M.S. thesis projects, 3 SURP (Summer Undergraduate Research Program) projects, and been the basis for 4 peer-reviewed publications and a chapter in “The Natural History of the Reptiles of Iowa,” a book scheduled to be published by the University of Iowa Press.

## Marine Biology (new course offering)

**B**y student request, Marine Biology was taught for the first time in Fall 2013. Initially the class had been set to enroll 20 students, but due to demand, a total of 35 students were allowed to enroll in the course. The course was taught by Dr. Maureen Clayton, who received her Ph.D. in Biological Oceanography (1996) from the Massachusetts Institute of Technology/Woods Hole Oceanographic Institution.

The course introduced students to a variety of topics, starting with the role of picoplankton in the open ocean, then moving onto the continental shelf to discuss the importance of upwelling in nutrient transport and productivity. This was followed by moving towards the shore to study the coral reefs, the intertidal zone and estuaries, while spending some time discussing the effects of oil spills on marine organisms. At the end of the semester, life in the



deep sea was investigated. A student (and faculty) favorite was “Fish” Fridays, featuring organisms such as the whale shark shown above. The course was a hit and will be offered again this coming fall.



# Faculty and Staff News (Continued)

## Field trip to hatchery



Fish Hatchery in Manchester. Photos by Joe Wilkinson of the Iowa City Press-Citizen

**D**r. Jim Demastes, along with his Field Zoology class, traveled to the DNR trout hatchery near Manchester in January to observe the spawning of rainbow, brown and brook trout. Each student was given the opportunity to spawn trout, which is normally done once a week from October through January by DNR technicians. They will gently rub the bellies of the trout as streams of bright orange eggs are collected into a net, then plastic bowls. Then sperm from male trout is

extracted in a similar manner and gently mixed with the egg collection using a turkey feather. This procedure produces 95-99 percent fertilization...dozens of times better than leaving it up to Nature in the stream.



Student wore rain coats and rubber gloves as they work to extract eggs from the trout by hand.

## Award of Faculty Excellence



Photo of Carl Thurman (Back row, 3rd from left) taken at the Board of Regents Luncheon for the Regents Award recipients.

**D**r. Carl Thurman, received a Board of Regents, State of Iowa Award for Faculty Excellence on September 11, 2013 at a luncheon honoring the outstanding contributions of UNI faculty and staff.

## Dean's Teaching Award

**D**r. Jeff Tamplin received the 2013 College of Humanities, Arts, and Sciences Dean's Award for Teaching Excellence in Departmental Programs. Dr. Tamplin is well respected by his students and he is one of the first faces our incoming freshmen see when they take Organismal Diversity lecture and lab. As more than one student has mentioned, Dr. Tamplin has a way of making each student feel known, even in a class of more than 150 students. Jeff has maintained the same excitement and enthusiasm for teaching that he had when he arrived at UNI. The Dean's Student Advisory Committee, composed of students representing the College of Humanities, Arts, and Sciences, is charged with selecting Dean's Awardees. The Dean's Awards are presented each year to recognize outstanding professors in the College of Humanities, Arts and Sciences.

## TriBeta Teaching Award

**B**eta Beta Beta (BBB) looks to honor teachers that go above and beyond the norm with the Teaching Award. The group nominates and votes for the winner in the spring. This past spring, BBB wished to reward

Mary McDade. Her enthusiasm for teaching is contagious and translated into an enthusiasm to learn. Mary's teaching method combines her fascination with the human body and her years of experience resulting in an interesting learning experience in her lectures and labs. BBB wishes to extend our congratulations and thanks to Mary for all her help.

# Student Club News

## Student clubs combined to travel to Omaha zoo



Students and faculty pose for a photo at the Henry Doorly Zoo in Omaha.

On November 16th a group of biology clubs' students, along with faculty members, traveled to Omaha to the Henry Doorly Zoo. Those that participated represented the Student Nature Society, Pre-Vet Club and the Marine Biology Club and included sponsors Pete Berendzen and Maureen Clayton for a total of 45

people. Ed Grunwald from Hartman Reserve also attended to learn more about the conservation of blue spotted salamanders.

There were tours of the Amphibian and Salamander Conservation and Research Center. The Marine Biology Club was provided an opportunity to go behind the scenes of the Scott Aquarium in the zoo and the Pre-Vet Club was given a behind the scenes tour of Henry Doorly Veterinary building.



Jellyfish; were on display at the Henry Doorly Omaha Zoo. Photo by Susan Graves

## Annual spring plant sale

The UNI Botanical Center will host our annual Spring Plant Sale on Thursday, May 1st. With the help of the Student Nature Society the sale has become a much anticipated campus event.



The Student Nature Society takes cuttings from plants for the annual plant sale.

From the first sale held in 1999 with two tables of small potted plants at Maucker Union, the plant sale has grown to a selection of over 2,000 plants and is now held at the Botanical Center. The tables in the classroom are filled

with everything from flowering annuals and bulbs, hanging baskets and unusual tropical and succulent plants. In the adjacent hallway are herbs such as thyme, parsley and the very popular 6 pack of assorted basil. For the home gardener we have heirloom tomatoes, peppers and eggplant.

Student Nature Society students are available to assist the shoppers with their selections and help them to their cars with their treasures. The sale starts at 7:30 a.m. and by about 2:00 p.m. there is a limited number of plants to choose from. Proceeds from the sale goes to the Student Nature Society and for the purchase of new species for the Botanical Center collection.



Plants line tables for the annual plant sale.



# New Faculty

## Kenneth Elgersma



**D**r. Kenneth Elgersma received his undergraduate degrees in biology and environmental studies at Dordt College in Sioux Center, Iowa. While an undergraduate there, he became interested in plant ecology, and spent two summers working at Cedar Creek Natural History Area (now Cedar Creek Ecosystem Science Reserve). After graduation, he continued working there until he found a job as a field technician at the University of Nebraska-Lincoln. For two years, he spent much of his time working alone in the Nebraska Sandhills, the fabulously empty stabilized sand dunes of north-central Nebraska. After falling in love there with ecology and with the prairie, he decided on a career path and enrolled in graduate school. If you ever want to irritate Kenneth, just talk about how flat and boring Nebraska is.

Kenneth received his Ph.D. in Ecology & Evolution from Rutgers University. His dissertation work under Dr. Joan Ehrenfeld examined the effects of non-native invasive forest understory plants on soil microbial communities and nutrient cycling, and subsequent effects on the plant community. While analyzing data for his research, he grew interested in statistics and completed his M.S. degree

in Statistics in his “free time” while conducting his dissertation research. While at Rutgers, Kenneth also met his wife, Dr. Ai Wen, a fellow graduate student in the Ecology & Evolution program working with Dr. David Ehrenfeld. David and Joan Ehrenfeld, a husband and wife team at Rutgers, were pretty pleased when Kenneth and Ai were married.

After finishing their degrees in New Jersey, Kenneth and Ai started their post-doc positions at the University of Michigan. Kenneth worked with Drs. Deborah Goldberg and Bill Currie investigating the effects of nutrient inputs into wetlands on their susceptibility to invasion by non-native plants. There, Kenneth built an array of 100 small artificial wetlands with controlled hydrological inputs and outputs in two locations in Michigan, and manipulated nutrient inputs and the plant community composition. Data from this project are still coming in, and Kenneth looks forward to analyzing some of these results.

Kenneth joined the faculty at UNI in August and is teaching Biostatistics and General Biology: Organismal Diversity lab. After spending much of his childhood on a farm in northwest Iowa, he is excited to be back in his “home state” after being away for almost 20 years. He is excited about conducting research in grasslands again, and will be investigating how different biofuel production practices affect soil nutrient cycling and retention. As an avid gardener, the rich black mollisol soils of Iowa are a welcome change from the thin fill-dirt of urban New Jersey, and he is looking forward to spring – if it ever comes – to start his garden.

## Jill Maroo



**D**r. Jill Maroo joins our faculty after earning her M.S. and Ph.D. in Science Education with an emphasis in Biology from The University of Southern Mississippi. Her dissertation explored nursing students’ attitudes toward science in the nursing curricula. This study was the first national look at nursing students’ attitudes and the information from the study will hopefully inform future curriculum decisions. Jill is developing a research program at UNI that focuses on how students’ use of representations and their attitudes play a role in learning science, specifically biology.

Jill splits her teaching duties at UNI between Science Education and the Biology Department. She comes to us with a nine year history of teaching Anatomy and Physiology labs and lectures, at both the community college and university levels. Jill is very happy she gets to continue teaching A&P labs at UNI. For Science Education she currently teaches Inquiry into Life Science, a class for elementary education majors. In addition to teaching, Jill enjoys meeting and working with her advisees in Biology Teaching. She is looking forward to learning more about UNI and meeting more students each semester.



# YOU CAN MAKE A DIFFERENCE!

**W**e take much pride in the accomplishments of our students and we hope that we have played some role in their success. We take very seriously our responsibility to educate and provide opportunities to our students and we are continually looking for ways to improve. With each passing year this has become increasingly difficult. Our departmental budget has not seen an increase in the past twelve years. Yet the costs of equipment, supplies, and travel have continued to rise. Our faculty have attempted to meet these challenges and have found ways to support students and provide students with opportunities by obtaining external funds. However, this too has become more difficult.

The cost to students continues to rise through increased tuition coupled with fewer opportunities available to students

via University-sponsored programs. It now costs the average student more than \$25,000 per year to attend UNI. Most of our students work outside of the University to support themselves and to pay for tuition. This in turn can impede their education and reduce their time for experiential learning. Although working while attending school can benefit students in learning time management skills, it may also defeat the purpose of attending a university and taking part in all that it can offer.

The financial support of many of our alumni help to provide what would otherwise be lost opportunities to our students. Many of the student scholarships that are offered via private funds have the caveat that students must work within the Department in order to receive scholarship funds. This is a wonderful idea as it requires the

students to participate in our Department and we hope this, in turn, stimulates the students to think of our Department as their home away from home. It provides faculty the opportunity to better know our students and provides our students the opportunity to interact with faculty, a win-win situation for both. Unfortunately, we have too few of these scholarship opportunities available for our students. Your financial support of existing scholarships or the endowment of new scholarships would ensure that our students today receive the same opportunities that were afforded to you. This is a legacy worth leaving. Your financial support of student scholarships and the Department as a whole would be much appreciated. Listed below are the current scholarship funds available for students as well as the Department's Biology fund which supports student/faculty research.

## Scholarships and Funding

### ◆ **Biology Alumni & Faculty Undergraduate Research Fund**

This fund is to be used for general undergraduate support such as but not limited to a partial student award/stipend, research or presentation related expenses, research conference travel, etc.

### ◆ **Biology Awards & Honors**

This fund is used to support "hard working" students who do not have any other financial assistance. Biology faculty nominate deserving students.

### ◆ **Biology Department Fund**

This fund is for general support for the Department of Biology. Monies from this account are used to support faculty/student research, faculty/student travel, and purchase of teaching supplies and equipment.

### ◆ **Biology Preserves Fund**

This fund is used to support the development and maintenance of the Biological Preserves System at UNI, including such items as purchase of trees, shrubs, and equipment as well as for the development of exhibit areas and support of personnel involved.

### ◆ **Caroline Czarnecki Biological Sciences Scholarship**

This scholarship provides support for

students who demonstrate merit and financial need, with preference given to students with a declared major in biological sciences, with a grade point average of at least 3.0. The award amount is \$1000.

### ◆ **Myrna and Gary Floyd Undergraduate Research Assistantship**

This assistantship is to provide support for two undergraduate research students in the Department of Biology.

### ◆ **Dr. and Mrs. Robert Good Summer Research Fellowship**

This fellowship is intended to support undergraduate student research carried out through the summer. The fellowship provides \$3000 for the support of an undergraduate research project.

### ◆ **Dr. Timothy Greiner Undergraduate Biology Scholarship**

This scholarship provides support to undergraduate biology majors who are in no less than their second semester of their major. The award amount is \$1000.

### ◆ **J.S. Latta Biology Scholarship**

This scholarship provides support for a declared biology major, either a freshman or sophomore having either completed or currently enrolled in both Organismal Diversity and Cell Structure and Function. The student must

have GPA of 3.5 or higher. The amount of the award is between \$250 and \$500.

### ◆ **Dr. Joan and Dan Meyer Biology Scholarship**

This scholarship supports students who demonstrate merit and financial need with preferences given to students with a declared major in Biology, with a grade point average of at least 3.2.

### ◆ **Dr. Alan R. Orr Research Awards Endowment Fund**

This award supports undergraduate experiential learning through hypothesis-driven research. Applicants must be Biology majors with a grade point average of at least 3.2 and conducting research with a faculty member in the Biology Department.

### ◆ **Bear and Sandy Stevens Family Endowed Biology Education Scholarship**

This scholarship supports students who demonstrate merit and financial need with preference given to students with a declared major in Biology Teaching, with a grade point average of at least 3.0.

### ◆ **Dr. Dave Swanson Research Award**

This award supports undergraduate experiential learning through hypothesis-driven research. Applicants must be Biology majors conducting research with a faculty member in the Biology Department.

## Department of Biology

University of Northern Iowa

Cedar Falls, IA 50614-0421

*Let us hear from you. . . and come see what we have. . .*

Let us know what you have been up to.  
You can email us at [david.saunders@uni.edu](mailto:david.saunders@uni.edu) or  
return this form to:

Department of Biology  
University of Northern Iowa  
Cedar Falls, IA 50614-0421

First Name \_\_\_\_\_ Last Name (maiden) \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Email: \_\_\_\_\_

Please share any news about you or your family to be included in the next Biology Newsletter.

*Contact info:* David Saunders  
Department Head  
319-273-2456  
[david.saunders@uni.edu](mailto:david.saunders@uni.edu)



*Web info:*  
<http://www.biology.uni.edu/>

# Support for students or department

Would you like to support a Biology student and/or the Biology Department?  
If so, please fill out the form below and return it to:

## UNI Foundation Financial Services

1223 W. 22nd Street  
Cedar Falls, IA 50614-0239

If you would like to start your own scholarship, contact Cassie Luze  
cassie.luze@uni.edu or Phone: 319-273-6360

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

E-mail: \_\_\_\_\_ Phone \_\_\_\_\_ Is this a cell phone \_\_\_\_\_

☐ Please check if new address, phone or email.

I/we would like to support the following fund(s)

- \$ \_\_\_\_\_ Biology Alumni & Faculty Research Fund (21-222596)  
\$ \_\_\_\_\_ Biology Department Fund which includes Dr. David Swanson Research Award (21-221607)  
\$ \_\_\_\_\_ Biology Awards & Honors (21-210342)  
\$ \_\_\_\_\_ Biological Preserves Fund (21-220162)  
\$ \_\_\_\_\_ Caroline Czarnecki Biological Sciences Scholarship (21-212250)  
\$ \_\_\_\_\_ Myrna & Gary Floyd Undergraduate Research Assistantship (21-222165)  
\$ \_\_\_\_\_ Dr. and Mrs. Robert Good Summer Research Fellowship (21-222342)  
\$ \_\_\_\_\_ Dr. Timothy Greiner Undergraduate Biology Scholarship (21-212261)  
\$ \_\_\_\_\_ J.S. Latta Quasi-Endowed Biology Scholarship (20-210303)  
\$ \_\_\_\_\_ Dr. Joan and Dan Meyer Biology Scholarship (21-212516)  
\$ \_\_\_\_\_ Dr. Alan R. Orr Research Awards Fund (21-211914)  
\$ \_\_\_\_\_ Bear and Sandy Stevens Family Endowed Biology Education Scholarship (30-212241)  
\$ \_\_\_\_\_ Total

*Online* .....

Go to the online pledge form at [www.uni-foundation.org/](http://www.uni-foundation.org/) and click on "Make an online gift". You will need to enter the specific name(s) of the Biology projects in the "Other" box near the bottom of the web form.

Matching Gifts: My (or my spouse's) company, \_\_\_\_\_ (name) will match my gift. Please contact your HR office for details and the matching gift form to be submitted with your payment.

*Check* .....

☐ Check enclosed, payable to the UNI Foundation

*Credit Card* .....

☐ Credit Card: Please charge my card \$ \_\_\_\_\_ beginning (mo/yr) \_\_\_\_\_ / \_\_\_\_\_

Signature (required) \_\_\_\_\_ Date \_\_\_\_\_

100415

Credit card information will not be kept on file.

Charge my: VISA MasterCard Discover American Express (circle one)

Card # \_\_\_\_\_ Exp. Date \_\_\_\_\_